

ENCAPSULATION OF SENSITIVE
LIQUID COMPONENTS INTO A MATRIX TO OBTAIN DISCRETE
SHELF-STABLE PARTICLES

ABSTRACT OF THE DISCLOSURE

5 A liquid encapsulant component which contains an active, sensitive
encapsulant, such as a live microorganism or an enzyme dissolved or dispersed in
a liquid plasticizer is admixed with a plasticizable matrix material. The matrix
material is plasticizable by the liquid plasticizer and the encapsulation of the
active encapsulant is accomplished at a low temperature and under low shear
10 conditions. The active component is encapsulated and/or embedded in the
plasticizable matrix component or material in a continuous process to produce
discrete, solid particles. The liquid content of the liquid encapsulant component
provides substantially all or completely all of the liquid plasticizer needed to
plasticize the matrix component to obtain a formable, extrudable, cuttable,
15 mixture or dough. Removal of liquid plasticizer prior to extrusion is not needed to
adjust the viscosity of the mixture for formability. Release of an active component
from the matrix may be delayed or controlled over time so that the active
component is delivered when and where it is needed to perform its intended
function. Controlled release; discrete, solid particles which contain an
20 encapsulated and/or embedded component such as a heat sensitive or readily
oxidizable pharmaceutically, biologically, or nutritionally active component are
continuously produced without substantial destruction of the matrix material or
encapsulant.